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REDISCOVERY OF A TYPE OF *CERATOPHRYS BOIEI* WIED (AMPHIBIA: ANURA: LEPTODACTYLIDAE)

by

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During routine curatorial duties some specimens of *Proceratophrys boiei* (Wied) were encountered in the collection of the Rijksmuseum van Natuurlijke Historie, Leiden. Upon comparison with the original description one of them proved to be one of Wied's original two specimens. It is here selected as lectotype of *Ceratophrys Boiei* Wied.

RESUMO

Durante tarefas curatoriais rotineiras, alguns espécimes de *Proceratophrys boiei* (Wied) foram encontrados na coleção do Rijksmuseum van Natuurlijke Historie, Leiden. Ao compará-los com a descrição original, um deles provou ser um dos dois exemplares originais de Wied. Ele é aqui selecionado como lectótipo de *Ceratophrys Boiei* Wied.

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Wied (1825: 592) described *Ceratophrys Boiei* on the basis of two specimens, one of which he received from Boie in Leiden and one from Lichtenstein in Berlin. Wied explicitly stated that he did not find this taxon himself during his travels in Brazil, but that thanks to the generosity of the two colleagues mentioned above he could examine two specimens. From the description itself it is only clear that Wied examined two specimens, more details about them are provided in the legend to the plate (Wied, 1822-31: rept. pl. 59) and in the section on *Ceratophrys* (Wied, 1825: 570-571), from which it is apparent that the specimen sent by Boie came from Bahia and that sent by Lichtenstein came from Rio de Janeiro. From the data provided in the text and the legend I

conclude that the Leiden specimen was the larger ("2 Zoll 1 Linie" = 2" 1''') and the Berlin one the smaller (1" 10'''). According to Wied (1825: 595) he had the specimen with the best preserved colours depicted, and in the light of his remarks on the Berlin specimen ("..... schien länger im Branntwein gewesen zu seyn, und zeichnete sich durch etwas verschiedene Färbung aus. — Seine Farbe war schon dunkeler geworden ...") it can be concluded that the Leiden specimen was depicted.

During routine curatorial work in the RMNH collection I encountered a bottle (RMNH 2151) containing a large, a medium-sized and a small specimen identified as *Ceratophrys boiei* Wied, collected by Natterer in Brazil. Examination of these specimens showed them to belong to *Proceratophrys boiei* (Wied), a species inhabiting southeastern Brazil from Pernambuco to Santa Catarina. These specimens apparently were obtained in exchange from the Vienna Museum, as on a list dated September 25, 1825, and signed by Hermann Schlegel appear the following specimens:

"Rana cornuta L.....ad. 1
.....jun. 1
.....pull. 3"

At present only these three specimens of *Proceratophrys boiei* and one adult of *Ceratophrys aurita* (Raddi) (RMNH 2150, originally identified as *C. dorsata* Wied) collected by Natterer in Brazil are present in the RMNH collection. Considering the date of the list it seems likely that these four specimens formed part of that exchange and originally were received as *Rana cornuta*. However, some inconsistencies are evident. RMNH 2150 (*Ceratophrys aurita*) clearly is an adult specimen (s-vl 108.4 mm) and so is the largest specimen in RMNH 2151 (s-vl 63.3 mm), though distinctly smaller than RMNH 2150. That would make two adults. The medium-sized specimen in RMNH 2151 could qualify as "jun." (= halfgrown (s-vl 52.7 mm)) and the smallest as "pull." (= juv. (s-vl 28.7 mm)). However, that would leave us with an extra adult and two missing juveniles. If, however, we assume RMNH 2150 was considered as adult, the largest specimen of RMNH 2151 as "jun." and the two other specimens originally in RMNH 2151 as juveniles, there would only be one missing juvenile. This would seem plausible, considering the policy followed in the mid nineteenth century to actively exchange specimens.

After comparing the three specimens in RMNH 2151 with the specimen depicted by Wied (1822-31: rept. pl. 59) it became evident that the medium-sized specimen (s-vl 52.7 mm) exactly agrees with the specimen on the plate in many individual characters. These characters, nicely reproduced in the plate, are 1) the two small black dots on the edge of the left upper lip, 2) the row of less distinct spots parallel to the upper lip, 3) the light spots on the shoulder, 4)

the dark pattern between the dermal ridges on the back and sacral area, and, 5) to a lesser degree, the colour pattern of the belly. This leads to the conclusion that RMNH 24109 (formerly RMNH 2151), s-vl 52.7 mm is the specimen described and depicted by Wied in his description of *Ceratophrys Boiei* and therefore one of the syntypes (The other one probably is in the Zoologisches Museum Berlin). RMNH 24109 is here selected as the lectotype of this taxon. However, there is a curatorial problem:

1. According to Pelzeln (1871: I-XX) and Papavero (1971: 80-87) Natterer never visited the province of Bahia. However, he worked extensively in the area around Rio de Janeiro and Sao Paulo, where *P. boiei* also does occur.
2. The material was received, or at least the list mentioned above was prepared, on September 25, 1825 at a time Boie still was in Leiden (he departed for the Dutch East Indies on December 21, 1825). Thus, upon receipt of the Vienna material Boie could have sent it directly to Wied (who writes repeatedly that he 'received' the specimen from Boie), who could then have included it in the description of his *C. Boiei*. As Wied's book was published in 1825 (assuming for the sake of reasoning that this was in December) the time schedule seems tight, but not impossible.

However, the fact that Wied (1825: 570-571) states: "Eine andere mit weisslichem Gesichte ....., welche ich in zwei Exemplaren erhielt, das eine durch die Güte des Herrn Professor Lichtenstein, welche aus *Rio de Janeiro* geschickt worden ist, das andere schon früher von Herrn Dr. Boie zu Leiden, welches aus *Bahia* kam ....." makes me doubt that the specimen from Leiden that Wied examined really formed part of the Natterer material. When considering the time available and Wied's above remark which suggests he already had this specimen for some time, it seems more likely that some mix-up took place and that the lectotype of *Ceratophrys boiei* became associated with two specimens of Natterer's material after it arrived in Leiden. As it is, it is impossible to reconstruct what really happened, but the fact is that RMNH 24109 (formerly medium-sized specimen in RMNH 2151) was described and depicted, and we therefore have to interpret the locality whence RMNH 24109 came as Bahia and assume the collector is unknown. This also means that of the original five Natterer specimens only three are left in Leiden.

Type locality. — The type locality as given by Wied was Bahia and Rio de Janeiro. Cochran (1955: 225) and Gorham (1966: 36) stated it to be "Province of Bahia" and Bokermann (1966: 25) restricted it to "Rio de Janeiro, Guanabara" on the basis that the species is common there. As a consequence of selecting RMNH 24109 as the lectotype Bahia becomes the type locality.

Details on the lectotype. — RMNH 24109 is in good condition and apparently still shows the same colour pattern as observed by Wied. Its meristic data (in

mm) are as follows: s-vl 52.7, middorsal head length 24.7, head width 26.9, height of head 13.5, length palpebral horns 5.8-5.3, internarial distance 3.2, interorbital distance 5.9, length upper eyelid 10.7-10.7, eye-nostril 5.3-5.2, nostril-snout 6.8-6.9, eye-snout 12.6-11.8, angle mouth-snout 25.4-25.4, tibia 18.5-18.4.

The dorsolateral ridges are well developed and enclose a grey area with an irregular, narrow brown mid-dorsal band. Light spots over the shoulder. A triangular dark brown spot in front of the ridge connecting the tips of the eyelids. Snout cream with sharp convex, nearly vertical border towards the brown posterior part of the face. A brown spot on each side of the midline near the tip of the snout, followed by two (left), respectively four (right) small brown dots on the upper lip. In all details the specimen agrees with descriptions and figures given by Wied (1825), Miranda Ribeiro (1920, 1926) and Cochran (1955).

An abbreviated synonymy follows.

Proceratophrys boiei (Wied)
(figs. 1-2)

Ceratophrys Boiei Wied, 1825: 571, 592; 1831: pl. 59; Wagler, 1828: text accompanying pl. 22; Duméril & Bibron, 1841: 437.
Ceratophrys boiei; Günther, 1858: 25; Steindachner, 1867: 28; Boulenger 1882: 223; Miranda Ribeiro, 1920: 292; Cochran, 1955: 225; Bokermann, 1966: 25; Gorham, 1966: 36; 1974: 46.
Stombus cornutus; Gravenhorst, 1825: 920.
Stombus Bojei; Gravenhorst, 1829: 50, pl. 9.
Ceratophrys cornuta (partly); Schlegel, 1837-1844: 29.
Ceratophrys granosa Cuvier, 1829: 107; 1836: 424; 1842: 148; Guerin Ménéville, 1829-44: pl. 26.
Ceratophrys intermedia Barbour, 1908: 323.
Stombus boiei; Miranda Ribeiro, 1920: 302; 1926: 122, 212; Bokermann, 1966: 25.
Ceratophrys renalis Miranda Ribeiro, 1920: 296.
Stombus renalis; Miranda Ribeiro, 1920: 302.
Proceratophrys boiei; Lynch, 1971: 134; Izecksohn & Peixoto, 1981: 22; Harding, 1983: 187; Frost, 1985: 338.

It should be noted here that Frost (1985: 339) errors when he gives the impression that Izecksohn & Peixoto (1981) were the ones that synonymized *Proceratophrys renalis* (Miranda Ribeiro) with *P. boiei*. Actually Bokermann (1966: 26) already stated that *Stombus renalis* was a synonym of *Stombus boiei*. Izecksohn & Peixoto (1981) only stated they studied the type of *Stombus renalis* and could not find any differences with *Proceratophrys boiei*, thus reinforcing Bokermann's opinion.

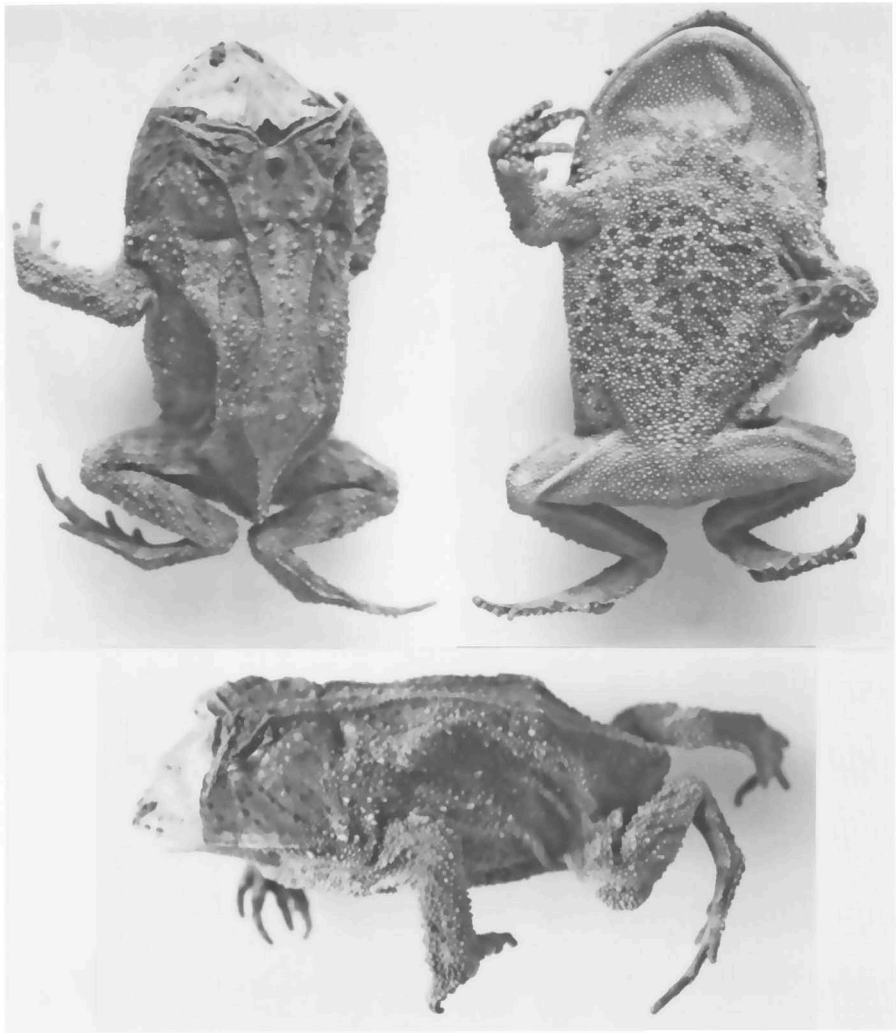

Fig. 1. *Proceratophrys boiei* (Wied). Lectotype, RMNH 24109, snout-vent length 52.7 mm. Dorsolateral, ventral and lateral view.

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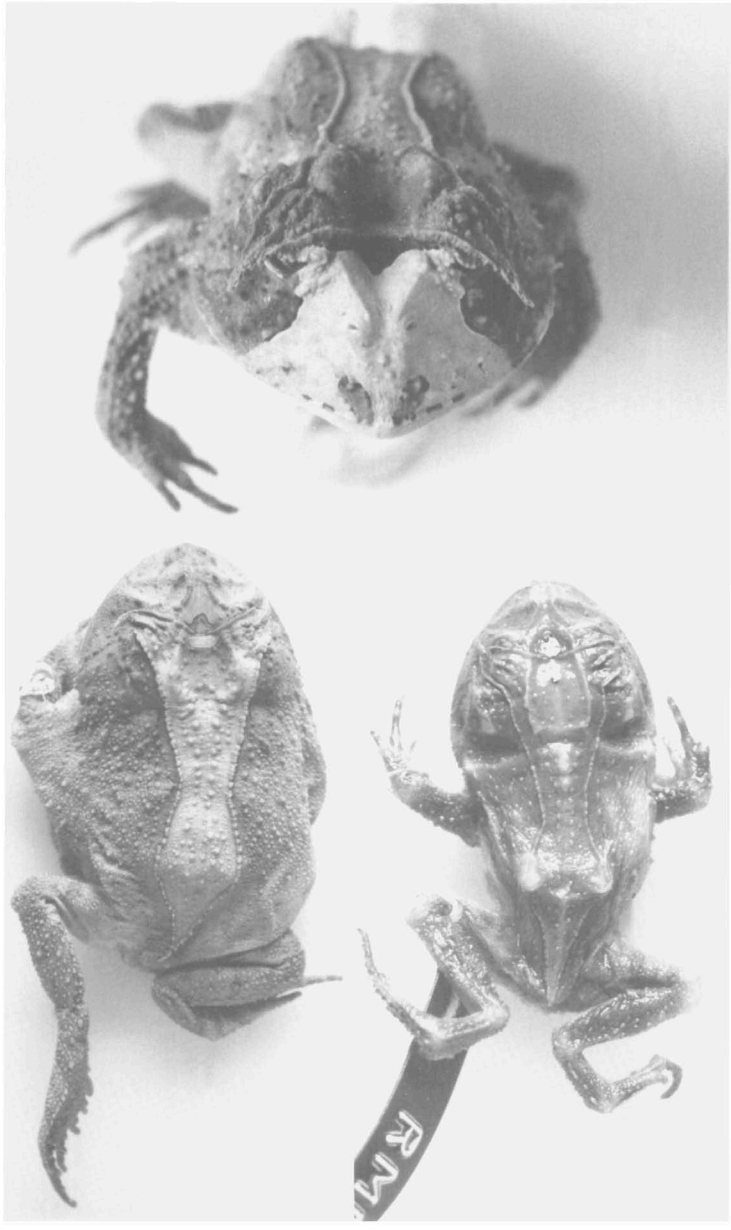

Fig. 2. *Proceratophrys boiei* (Wied). Upper figure anterior view of snout of lectotype, RMNH 24109, showing the spots on the snout. Lower left RMNH 2151a, lower right RMNH 2151b, both collected by Natterer and obtained in exchange from the Vienna Museum.

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